

I. Project Title and Project Purpose Statement

The Regional Environmental Council, Inc. (REC) seeks to utilize its grassroots experience and community partnerships to conduct a “Worcester IPM Pilot Project (WIPM) in Worcester’s 5 lowest-income neighborhoods. The WIPM will be a community-based healthy homes project that will establish a process and protocol in the city of Worcester for mitigating asthma triggers related to the presence of pests (like mice and cockroaches) and reducing exposure to hazardous chemicals and pesticides in low-income households by utilizing Integrated Pest Management (IPM) techniques to eliminate nesting places and sources of food and water, to exclude pests from the home and, when necessary, to use the safest pesticide available in the safest manner. WIPM project will generate referrals for home interventions from 3 sources: The City of Worcester’s Housing Division, who will make referrals for home interventions via community members who received assistance from the City of Worcester’s Worcester Lead Abatement Program (WLAP). Referrals will also be generated from the City’s Inspectional Services Department through home inspections, orders to correct, and referrals from the City’s Childhood Lead Poisoning Prevention Program (CLPPP) inspectors. The third source of referrals will be generated from UMASS Memorial Medical Center, who will make referrals for IPM intervention through their recent Asthma Pilot Project, which does not currently address the issue of pests and pesticides in homes. The WIPM project will seek to achieve these goals:

1. Conduct IPM intervention and education in 40 targeted homes in Worcester’s 5 lowest-income environmental justice neighborhoods.
2. Disseminate information about effective and environmentally sound pest management practices to renters and homeowners.
3. Eliminate human health hazards such as the risk of environmental asthma triggers through IPM strategies.
4. Train and empower community residents, and enhance understanding of the threat of pests so that participants can further educate their neighbors, family members, and friends.

Through REC’s recent EPA-funded CARE Level I project (2011-2013), perception data collected and community prioritization with grassroots community members and stakeholders identified the presence of pests and pesticide use as major environmental health threats in these communities. The WIPM pilot project will concentrate its implementation in the 5 lowest-income, highest-risk neighborhoods in the city. Main South, Piedmont, Bell Hill, Oak Hill, and Quinsigamond Village/South Worcester. These neighborhoods fall within the definition of “Environmental Justice Communities,” and also correspond to the city’s federally designated Neighborhood Revitalization Strategy Areas (NRSA). These neighborhoods are the most densely populated, have the highest percentages of ethnic and racial diversity, the lowest income, and the highest crime rates in the city (Downs & Ross, 2003). **This project includes activities authorized by the Federal Insecticide, Fungicide, and Rodenticide Act, Section 20(a).**

REC has worked since 2006 as lead agency coordinating the Worcester Green & Healthy Homes Coalition (WGHHC). WGHHC has grown to include over 30 partner organizations from diverse sectors, including: municipal and state agencies, landlord and tenant associations, neighborhood health centers, refugee resettlement and affordable housing agencies, and grassroots community-based organizations representing Worcester's Latino, African American, Southeast Asian, and African communities. REC will build a multi-stakeholder partnership to execute the WIPM project work plan. The attached 5 MOAs from WGHHC strategic partners are a representative slice of the full partnership coalition who will be working together with us on the WIPM project. Project partners in the MOAs include: the *City of Worcester's Housing Division* (municipal agency); the *City of Worcester Department of Inspectional Services* (municipal agency); *Southeast Asian Coalition of Central MA* (community based organization serving Worcester's Southeast Asian community); *UMASS Memorial Medical Center* (health care agency); and the *Worcester Roots Project* (community based environmental justice organization serving Worcester's Latino, African American, and Southeast Asian communities).

II. Environmental and/or Public Health information about the Affected Community

Worcester has a population of 181,045 (Census 2010) making it the 2nd largest city in New England after Boston. More than 20% of families with children live below the poverty level and for single families headed by single females, this figure jumps to 60%. (U.S. Census Bureau American Community Survey, 2005-2009). Over 63% of public school students are low-income, versus the statewide average of 28.9% (Census 2000). In addition, the city has encountered serious environmental challenges over the years. For the purpose of this project we will concentrate our efforts in the 5 lowest-income, highest-risk environmental justice neighborhoods in the city: Main South, Piedmont, Bell Hill, Oak Hill, and Quinsigamond Village/South Worcester. Worcester's most vulnerable neighborhoods have a long history of air, water, and land pollution. Decaying factories and warehouses, abandoned lots and buildings are a ubiquitous presence. Residents face an elevated climate of violence; prevalence of illegal activities such as prostitution, drug sales and drug abuse; exposure to household and industrial toxins; inadequate infrastructure; substandard housing; and illegal dumping of trash (Ross & Downs, 2005, 2010). Interviews with residents and CBOs indicate that community members daily confront built environment, economic and household conditions associated with a range of negative health outcomes, including obesity, diabetes, low birth weight, cardiovascular disease, mental health problems, youth behavior disorders and learning disabilities. Other data show that childhood lead poisoning, child asthma, and substance abuse rates are all high for the target community compared to the city at large, and thus very high compared to State levels (MDPH 2010). Worcester was #1 (worst) in total point ranking, for cities in Massachusetts in a recent environmental justice assessment of the state (Faber and Krieg 2005). This assessment analyzed the extent to which communities were overburdened through exposure to landfills, hazardous waste sites, trash transfer stations, incinerators, polluting industry, power plants, and cumulative environmental hazards.

Worcester in general has an old housing stock, with 57% of housing units built before 1950 (MA DPH 2013), but housing characteristics in these 5 neighborhoods are very poor compared to other parts of the city. Abandoned and boarded-up buildings have also increased in recent years, as a result of the economic woes common throughout the country, which have resulted in increased rates of foreclosure in these neighborhoods. The extent of housing problems in these neighborhoods has been made clear to us in our daily work and lives (most of REC's staff live in the target neighborhoods) through our recent and on-going neighborhood canvassing, community prioritization through our CARE project and door-knocking activities. Some of these houses have structural problems, poor air circulation and moisture issues due to poor insulation, noisy, aging and inefficient furnaces, poor ventilation for combustion appliances, plumbing leaks, broken windows and air leaks, old household appliances and other energy, health, and environmental concerns.

Worcester is home to a number of additional areas of environmental concern. For example, the Port of Worcester, New England's largest inter-modal ocean container handling facility, is located in the heart of the city, with railroad tracks running directly through some of the most densely populated, economically disadvantaged communities. There is also an effort underway to expand the current CSX freight rail depot that borders several residential neighborhoods with plans to make it the primary rail hub for CSX in New England over the next 2-3 years. A waste incineration facility located just over the border in the town of Millbury is directly adjacent to the Quinsigamond Village/South Worcester, one of Worcester's most densely populated, lowest income areas.

Once thriving industrial complexes are now extremely toxic Brownfield sites; the City of Worcester's Technical Services Department has identified more than 1,000 Brownfields in Worcester in recent years. Updated data from local focus groups and recent CARE project studies conducted by REC and our partners confirms that environmental risk factors fall into two broad categories:

- i. Over-exposure to *chemical* and/or *biological* pollutants inside sub-standard homes, and in the outdoor neighborhood environment – potential air pollutants inside and outside, potential drinking water pollutants, potential soil pollutants;
- ii. Over-exposure to *physical* features of a degraded built environment – accumulation of trash and litter, dilapidated housing, brownfields and abandoned industrial buildings, paucity of green space for recreation and beautification, inadequate transportation and mobility constraints.

REC and members of the Worcester Green and Healthy Homes Coalition's work through the CARE project revealed that pests and toxics in homes were one of the major issues that residents prioritized as concerns which require action to eliminate the threat of environmental asthma triggers and other health hazards. Recent home-based asthma pilot work from WGHHC coalition's partner UMass Memorial Medical Center also confirms elevated incidences in asthma related illnesses among school-aged children in Bell Hill (one of the 5 target areas) leading to

school absenteeism. Asthma-related school absenteeism is endemic throughout our target neighborhoods.

III Organization's Historical Connection to the Affected Community

The Regional Environmental Council (REC) was founded in 1971 as a private, non-profit organization to educate and empower the communities of Central Massachusetts around the environmental issues threatening our region, and to support residents to take action to bring positive changes to promote healthy, sustainable and just communities. We have built strong community partnerships over four decades. Our members, volunteers, staff, and board have organized and advocated for initiatives that foster environmental and social justice, ensure ecological sustainability and equitable access to clean air and water, open space, local, organic and nutritious food, clean energy, green jobs, and healthy homes, schools, workplaces and neighborhoods. Our successes have been made possible through our commitment to working hand in hand with our neighbors to develop local solutions to address the root causes of environmental justice problems. REC is a well-respected organization with a history of working in a collaborative, consensus-building, and results-oriented manner to create change through community empowerment. REC's primary programs are: ***Food Justice***, which includes: *YouthGROW*, a youth farming and leadership program serving teens from Worcester's inner city; *UGROW*, a citywide community gardening network of 60 urban gardens and over 400 gardeners; and *REC Community Farmers Markets*, providing affordable, accessible produce to inner city residents; and ***Environmental Health & Justice***, which includes: Worcester Green and Healthy Homes Coalition (WGHHC), a coalition working to eliminate childhood lead poisoning, childhood asthma, and environmental health threats in homes such as pests, mold and mildew, and household toxics. in Worcester; *Weatherize Worcester* encourages low-income residents to weatherize and make their homes more energy efficient; and *Worcester Trash Action*, an effort to fight illegal dumping and litter while organizing neighborhood cleanups throughout the year. The Worcester Green and Healthy Homes Coalition (WGHHC) is characteristic of our work. In 2006 REC was selected by local community partner organizations and the MA Dept. of Public Health (MDPH) to coordinate the Worcester Lead Action Collaborative (WLAC)—since re-named the Worcester Green and Healthy Homes Coalition (WGHHC)—with MDPH funding. These partners selected REC based on our strong reputation as a grassroots environmental justice organization with key community connections, long experience with group facilitation and consensus-building processes, and the capacity to bring diverse partners together to take effective action. Since 2006, WGHHC has grown to include more than 30 partners from diverse sectors, including: municipal and state agencies, landlord and tenant associations, neighborhood health centers, refugee resettlement and affordable housing agencies, and grassroots community and faith-based organizations representing Worcester's Latino, African American, Southeast Asian and African communities.

WGHHC has successfully conducted outreach and organizing activities throughout the city to educate and empower residents, with a special focus on environmental justice neighborhoods. WGHHC has brought substantial new resources to the city to help create healthy and affordable

housing. Most significantly, since 2007 WGHHC, in partnership with the City of Worcester, has received 4 grants totaling approximately \$11.5 million from the U.S. Department of Housing and Urban Development to abate 700 units of housing. WGHHC, through the REC, is subcontracted by the City to conduct all outreach, education, and marketing efforts for these grants in environmental justice neighborhoods and among highest-risk, most vulnerable communities (e.g., immigrant & refugee communities, low-income communities of color, etc.). Through our successful efforts the City is on target to exceed the 700 unit goal.

WGHHC's efforts have contributed to dramatic reductions in elevated blood lead levels for children under age 6 in the City of Worcester. Cases of elevated levels 10µg/dl and above dropped from 197 in 2005 to 23 in 2013, an 88% reduction. Levels above 25µg/dl (considered "poisoned" in Massachusetts) dropped from 17 in 2005 to just 1 in 2013, a 94% reduction, placing WGHHC within reach of meeting its goal to eliminate childhood lead poisoning in Worcester (City of Worcester CLPPP 2013). Based on this success, WGHHC received U.S. EPA Environmental Merit Awards in 2010 and again in 2012.

REC's EPA CARE Level-1 project (2011-2013) also helped strengthened the relationship between REC and residents in the 5 target neighborhoods. REC and members of the WGHHC conducted over 22 focus group discussions in schools, community cultural centers, faith-based associations, and the like, that initiated deeper conversation about residents' perceptions of environmental health threats. Based on the perception data collected, REC is now working with community members to seek funding sources to address residents' priority concerns. The proposed WIPM project is modeled after residents' deep commitment to eliminate pests and other environmental health risks to reduce the threat of environmental asthma triggers among children in our target neighborhoods.

IV. Project Description

The Worcester IPM Pilot Project will bring together multi-sector stakeholders to build on the success of the REC's recently completed CARE Level-1 project (2011-2013) by addressing one of the primary environmental health threats prioritized by diverse stakeholders and grassroots community members through the CARE process—asthma caused by the presence of pests (cockroaches, mice, etc.) in homes in Worcester's lowest-income environmental justice neighborhoods and via conventional solutions to such pests—namely toxic pesticides.

Integrated pest management (IPM) is a different approach than traditional pest control. It emphasizes eliminating nesting places, as well as sources of food and water for the pests, and it excludes the pests from the home. It uses the safest pesticide in the safest manner only when necessary. Studies by Purdue University and Virginia Tech show that it is more effective and, once pests are under control, cost effective. Programs at Boston Housing Authority, Cuyahoga Metropolitan Housing Authority, and in Salinas, California highlight the promise of IPM. (National Center for Healthy Housing, 2008).

Currently, Worcester lacks any systematic approach by any municipal or nongovernmental agency to addressing the environmental health threats caused by pests and pesticides in Worcester's environmental justice communities. Our proposed pilot project seeks to address this gap by bringing committed stakeholders together from Community Based Organizations, Municipal Government, Health and Social Service Agencies, along with grassroots community members who have been working together via the REC-led Worcester Green and Healthy Homes Coalition since 2006. Coordination and planning will take place during monthly meetings of the Coalition and our more than 30 organizational members.

This project will implement IPM interventions and resident training in a minimum of 40 units of low-income housing in Worcester's 5 environmental justice neighborhoods. Referrals will be made by all organizational members of the Worcester Green & Healthy Homes Coalition, including the City of Worcester (via the Housing Division and Inspectional Services Department) and UMass Memorial Medical Center (via a small extant asthma pilot project). The Program Manager and members of the Coalition—including 2 subcontractors—will be trained by the National Center for Healthy Housing to conduct IPM interventions—training referred families with both pest infestations and asthmatic children—to conduct DIY IPM interventions themselves (like sealing food containers, using green cleaning products and keeping garbage contained). In addition, we will contract with area Pest Control Contractors to utilize minimally invasive IPM methods each month for a year at each of the 40 homes.

In addition to reducing or eliminating pest and pesticide-related asthma triggers in 40 low-income homes, we expect this project will inform an ongoing and larger effort to eradicate pests in homes across Worcester environmental justice communities. This pilot will help establish a protocol and collaboration process for IPM interventions as a healthy homes strategy among Worcester's municipal, health, and social service agencies, community-based organizations, and will empower community members to train one another on the importance and possibility to maintain a home environment that is free of pests and pesticides that can contribute to childhood asthma.

V. Organizational Capacity and Programmatic Capability

The REC's recent accomplishments include:

- Successfully completed EPA CARE Level-1 project (2011-2013) to build community capacity and assess environmental health threats in Worcester's 5 lowest-income neighborhoods: Grant # 96148201 – “Worcester Healthy Homes & Neighborhoods Initiative” – \$100,000; Project Officer: Kwabena Kyei-Aboagye
- Successfully completed EPA Environmental Justice Small Grant (2012-2013) - EPA-OECA-OEJ-12-01 – “Weatherize Worcester: Community Mobilization for Weatherization and Energy Efficiency” - \$25,000; Project Officer: Kwabena Kyei-Aboagye
- Partnered with Clark University, Family Health Center of Worcester, and Worcester Youth Center on NIEHS-funded **Neighborhood STRENGTH project** to identify environmental health risks in Worcester's Main South and Piedmont neighborhoods from 2004-2009.
- Conducted EPA-funded **community-based environmental risk assessment** of Worcester's Quinsigamond Village neighborhood in partnership with Worcester Polytechnic Institute in 2004 to

increase knowledge of environmental health threats and identify major sources of environmental risk.

- Organized Worcester residents in 2003 to ensure that **strict mercury air emission standards** for solid waste incinerators were maintained, culminating in a ban on the sale of mercury thermometers.
- Worked with Worcester City Council to pass a **“20 by 2010” Clean Energy Resolution** in March 2005, committing to receive 20% of our municipal energy from renewable sources by 2010.
- Educated hundreds of members of Worcester’s Spanish-speaking communities about **alternatives to toxic household cleaning products** through our SPIN/Tesh program (Safe Products in Neighborhoods/Toxicos en su hogar) from 2003-2005.

REC employs generally recognized administrative and financial systems to ensure that the organization functions smoothly, fulfills all of its obligations, and remains transparent. REC’s staff and Board ensure that programs consistently meet goals and objectives, complete operating evaluations, and meet reporting requirements. REC contracts with a professional bookkeeper who reviews all financials on a weekly basis, and an accountant who completes an annual audit.

VI. Qualifications of the Project Manager (PM)

Kwabena Owusu Ansah is the REC’s **Environmental Health & Justice Program Director**. Mr. Owusu-Ansah is responsible for managing all aspects of the Environmental Health & Justice Program, including program development and management and staff supervision. He holds an M.A. in Community Development and Planning from Clark University (Worcester) and has a background in environmental justice research, particularly in environmental determinants of health disparities among inner city residents. Mr. Owusu Ansah has led past EPA-funded projects, including our recent EPA CARE Level-1 initiative (2011-2013) and our most recent EPA Environmental Justice Small Grant (2012-2013). He speaks two West African languages, and has worked as an environmental justice Program Officer for two NGO’s overseas. His resume is attached along with that of our Executive Director, Steven Fischer.

VII. Past Performance in Reporting on Outputs and Outcomes

REC has significant experience completing and reporting on federally funded projects. Recent federally funded projects include:

Successfully completed EPA CARE Level-1 project (2011-2013) to build community capacity and assess environmental health threats in Worcester’s 5 lowest-income neighborhoods: Grant # 96148201 – “Worcester Healthy Homes & Neighborhoods Initiative” – \$100,000; Project Officer: Kwabena Kyei-Aboagye

Successfully completed EPA Environmental Justice Small Grant (2012-2013) - EPA-OECA-OEJ-12-01 – “Weatherize Worcester: Community Mobilization for Weatherization and Energy Efficiency” - \$25,000; Project Officer: Kwabena Kyei-Aboagye

Worcester Green & Healthy Homes Coalition (WGHHC), funded by a U.S. Department of Housing and Urban Development Lead Hazard Control Grant in 2007(\$200,000 over 3 years), in 2009 (\$360,000 over 3 years), and in 2013 (\$240,000 over 3 years). In 2007, 2009, and 2013 the REC worked with the WGHHC and the City of Worcester (a partner in the Collaborative) to develop and submit successful proposals for 3 HUD Lead Hazard Control Grants and 1 Lead Hazard Reduction Demo Grant, securing approx. \$11.5 million in funding to de-lead 700 units of housing in Worcester over three 36 month periods. These grants are administered by the City of

Worcester, the REC is a subcontract and also manages 8 sub-subcontracts with CBO partners to conduct outreach, education, and marketing for the Worcester Lead Abatement Program.

Food Justice Program, USDA/NIFA Community Food Projects Competitive Grants Program, (September, 2011 to present, \$300,000). REC's Food Justice Program was funded to work with residents of Worcester's lowest-income neighborhoods to improve food security through community gardens, urban agriculture, and farmers markets. To date we have met all objectives and reporting requirements.